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# Acylcarnitine assay

Understand energy homeostasis across generations

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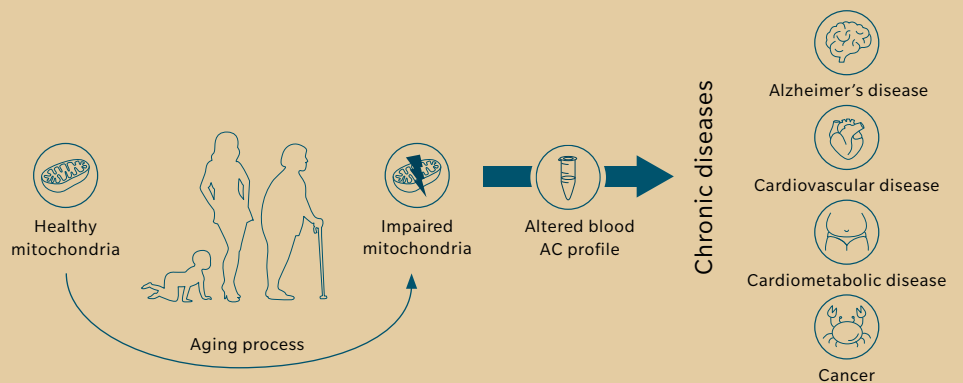
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# Acylcarnitine assay

Chronic diseases are associated with changes in acylcarnitine metabolism

## Acylcarnitines in health and disease

Analysis of acylcarnitines when screening blood for inborn errors of metabolism. There is also growing interest in how acylcarnitines can help to understand and diagnose other metabolic diseases, such as certain types of cancer, cardiovascular diseases, and neurological disorders.



## Covered metabolites

Analyte (short name)	LLOQ* [ $\mu\text{M}$ ] in plasma   serum	Analyte (short name)	LLOQ* [ $\mu\text{M}$ ] in plasma   serum
Carnitine (C0)	1	Suberoylcarnitine (C8-DC)	0.03
Acetylcarnitine (C2)	0.2	trans-2-Octenoylcarnitine (trans-2-C8:1)	0.03
Propionylcarnitine (C3)	0.1	Decanoylcarnitine (C10)	0.013
Malonylcarnitine (C3-DC)	0.04	Sebacoylcarnitine (C10-DC)	0.03
Methylmalonylcarnitine (C3-M-DC)	0.06	trans-2-Decenoylcarnitine (trans-2-C10:1)	0.03
Butyrylcarnitine (C4)	0.0125	Dodecanoylcarnitine (C14)	0.015
Isobutyrylcarnitine (Iso-C4)	0.03	Hydroxydodecanoylcarnitine (trans-2-C14:1)	0.005
Succinylcarnitine (C4-DC)	0.012	trans-2-Dodecenoylcarnitine (trans-2-C12:1)	0.03
Hydroxybutyrylcarnitine (C4-OH)	0.024	Tetradecanoylcarnitine (C14:2)	0.012
2-Methylbutyrylcarnitine (C4-M)	0.03	trans-2-Tetradecenoylcarnitine (trans-2-C14:1)	0.03
3-Methylcrotonylcarnitine (C4:1-M)	0.018	Tetradecadienylcarnitine (C14:2)	0.012
Valerylcarnitine (C5)	0.04	Hexadecanoylcarnitine (C16)	0.06
Isovalerylcarnitine (Iso-C5)	0.03	Hydroxyhexadecanoylcarnitine (C16-OH)	0.008
Hydroxyisovalerylcarnitine (Iso-C5-OH)	0.03	cis-9-Hexadecenoylcarnitine (cis-9-C16:1)	0.03
Glutaryl carnitine (C5-DC)	0.03	trans-2-Hexadecenoylcarnitine (trans-2-C16:1)	0.03
Methylglutaryl carnitine (C5-M-DC)	0.03	Hydroxyhexadecenoylcarnitine (C16:1-OH)	0.016
Pivaloylcarnitine (C5-P)	0.04	Octadecanoylcarnitine (C18)	0.06
Tiglylcarnitine (C5:1)	0.03	Hydroxyoctadecanoylcarnitine	0.032
Hexanoylcarnitine (C6)	0.015	cis-9-Octadecenoylcarnitine (cis-9-C18:1)	0.04
Adipoylcarnitine (C6-DC)	0.02	Hydroxyoctadecenoylcarnitine (C18:1-OH)	0.02
Hydroxyhexanoylcarnitine (C6-OH)	0.04	Octadecadienylcarnitine (C18:2)	0.024
Octanoylcarnitine (C8)	0.024	Arachidonoylcarnitine (C20:4)	0.03

\* Lower limit of quantification

Quantify up to 44 metabolites

Standardized, quality-controlled assay with absolute quantification, comprehensive coverage, and high resolution.

### Analytical details

- LC-MS-based assay
- Robust 7-point calibration
- 3 levels of quality controls

### Sample requirements

- 30  $\mu\text{L}$  plasma/serum
- 50-100 mg tissue
- For other matrices, please contact us (<https://biocrates.com/contact>)

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